Melvin Butte Forest Management Project

Silviculture Treatment Specifications and Implementation Guidelines Setting ID (stand) 0601050538001(0905)

EA Unit #37

Stewardship Imp Units 11 and 12

Fuels Imp # TBD

11/15/2015

Management Allocations:

LRMP: Front Country Seen/Unseen MA 18

NWFP: Matrix

EA Treatment Name: Thinning

Secondary treatments: Underburn (prescribed), pile burning, mastication

Site Description:

Aspect: Northeast to flat

Slope:0-35%

Unit 12 has steeper slopes near 1620 road.

Unit 11 is generally 0-10% and rolling.

Plant association- dry mixed conifer, CWS

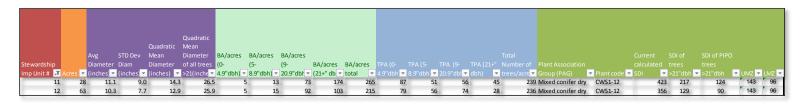
Past management-

The stand had selective removal of large ponderosa pine (overstory removal-OSR) 40-60 years ago. This past selective OSR removed ~30-50ft² basal area per acre (BA/acre) of ponderosa pine. Fire suppression of natural and/or human ignitions has occurred from early in the 20th century.

Existing condition-

The stand is a multi-aged and multi-story stand with at least 3 separate age classes. Both fire suppression and selective OSR have acted interactively and indirectly to create a species proportion that is high in white fir (in all size classes) and low in ponderosa pine proportions. The stand has pockets of large diameter downed wood and snag recruitment of primarily ponderosa pine. Under current trajectory, the stand will continue to lose the existing overstory pine with replacement occurring with white/grand fir. Overstory fir/pine proportion is around 60/40 and increases greatly to 80/20 when considering smaller size classes.

Table 1. Stand information as determined from Lidar data



Conifer heights – range from 0-~150ft tall.

Diameters- range from 0-40" plus

Ages- range from 0-350yrs plus

Tree species- ponderosa pine, grand/white fir

Insects and Disease-

The units contain small pockets of bark beetle activity (or former activity) especially in areas with dense arrangements of second growth trees. In addition, unit 12 contains white fir dwarf mistletoe causing moderate levels of branch flagging.

Old growth ponderosa pine-

Within the units there is a remnant component of ponderosa pine that have old growth characteristics (Van Pelt 2008). These old growth pine are configured as single trees and in groups (clumps). They tend to big in size (>21inches) however there are scattered smaller old growth pine that are subordinate in clumps and, on occasion, as individuals.

Goals of marking

- 1) Maintain fire climax ponderosa pine including old forest structure
- 2) Induce and/or maintain spatially complex arrangement of leave trees
- 3) Alter fir/pine species proportions while maintaining adequate stocking for this plant association

Marking guidelines-

Saw material- Leave tree mark (LTM).

Non-Saw material- Designation by description (DxD) (see below).

The below table should be used as a guide in order to retain and/or induce stem density variability into the stand. Low through high density (variability) is desirable in the stand.

Percent area of	Basal Area	Unit 11	Unit 12
Units	(sqft)	acres	acres
10%	20-40	3	6
15%	50	4	9
50%	60	14	32
15%	70	4	9
10%	80-100	3	6
Totals		28	63

- 1) Retain all snags regardless of size.
- 2) Marking will be largely done on just fir (all size classes- except 4b). Leave tree basal area will be variable and generally should range from 20-100ft² (60 sq/ft avg.) basal area/acre (above table).
- 3) Always choose cutting a fir over ponderosa pine in order to meet basal area ranges. Adjustments to fir/ pine proportions shall approach 5% fir/ 95% pine across the units. See above for existing proportions. Thinning of ponderosa pine will be minimal and is isolated to 2nd growth pockets throughout the units (several contain bark beetle impacts). Thinning in these locations will be generally from below. Only choose a larger tree over a small one in order to create clumpy structure or reduce any dwarf mistletoe that may be present.
- 4) Identify and retain large trees, old tree clumps, large snags, and other ecologically important structural elements of the stand that should be preserved. Old trees are those at least 150 years old and can be identified by physical

characteristics such as ponderosa pine with orange, plate bark, true fir with thick, furrowed bark, and all trees with complex forms, including broken or malformed tops and thick upper branches. Use the Van Pelt (2008) guidelines to assist with old tree identification or fir guide (attached here). Old trees do not necessarily have large diameters.

- a. For old individual and clumps of ponderosa pine, remove all trees within an area equal to twice the drip-line of the crown(s) of these overstory tree(s). An occasional healthy, medium sized ponderosa pine may be left within this area especially when the old growth ponderosa pine looks as if is fading and dying (see # 5 below).
- b. While most of the fir in the stand have encroached into the stand be on the lookout for fir trees that are contemporaries to the old growth ponderosa pine. Physical appearances include deep bark furrows, high live branches and darker colored bark. These trees may be >150 years old and should be retained. Generally trees that are >28" dbh should be examined for age.
- 5) In areas that have old growth ponderosa pine trees that appear to be fading and dying (yellowing needles, little to no live crown) ignore the stocking contributions from these trees and allow for ponderosa pine replacement.
- 6) Within units leave a slightly higher proportion of basal area in areas that are productive or unique microsites. These will be identified as small swales, northerly aspects (or pitches). For example, in Unit 12 the southwest corner has steep slopes and aspects become strongly defined to north to northeast. In Unit 11 the western area trends to the east to northeast and serve as areas within the stand representing higher productivity "zones".
- 7) In areas with low ponderosa pine stocking contributions, retain equivalent basal areas (from above) in grand/ white fir. Leave trees will be arranged irregularly, i.e. individuals and clumps.

Non-saw material-5-9"dbh

Designation by description (DxD)

All grand fir and lodgepole up to 5-9"dbh will be thinned. These trees are the result of altered fire regime and have grown into the units preventing ponderosa pine regeneration and creating fuel ladders to the overstory pine.

Retain all ponderosa pine.

0-5"dbh material-

Retain all ponderosa pine except those with high mistletoe infections. Retain 40-170 TPA (32ftx32ft-16ftx16ft). Form and vigor take precedence over spacing with some areas absent of leave trees when highly diseased.

Signed: William Brendecke 11/15/2015

Certified Silviculturist